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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/830,468	06/11/2001	Yuri Bolotinsky	1811.65458	8164

24978 7590 05/20/2003

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EXAMINER

POKER, JENNIFER A

ART UNIT	PAPER NUMBER
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2832

DATE MAILED: 05/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/830,468

Applicant(s)

BOLOTINSKY ET AL. 

Examiner

Jennifer A. Poker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 1-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>8</u> | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Election/Restrictions and General Status

1. Applicant's election without traverse of Group II, claims 20-27 (and added claim 28), in Paper No. 12 is acknowledged. Therefore, claims 20-28 are being examined.
2. Claims 1-19 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 12.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4. Claim 20-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 20, applicant states in lines 10 and 19, "...fixing each of the annealed planar toroids by impregnation." AND "...fixing each of the annealed column-like toroids by impregnation." It was unclear what they were being fixed to. Were they being fixed to one another? Were they being fixed to a supportive housing?? For examination purposes, it was understood by the examiner that the plate-like elements and the column-like toroids were being fixed to one another by the impregnation.

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5. Regarding claim 23 and 24, applicant states the limitation, "...said amorphous *ribbon* strips". There is insufficient antecedent basis for this limitation in the claim. Furthermore, it appears from figure 1, that the width of the top and bottom plate-like elements is much greater than the height. Clarification is requested.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 20-22, and 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 4,338,657 to Lisin, et al, in view of European Patent Number 0 151 048 to Wakeling, et al, and further in view of U.S. Patent Number 5,168,255 to Poulsen.

Regarding claim 20, 21, and 28, Lisin, et al, discloses a three-phase transformer with a spatial magnetic circuit comprising:

(1) Securing three vertical stacks of closed cores insulated from one another in an insulating frame, (Abstract) (Figures 2 and 3), all secured between top and bottom supporting plates; the vertical stacks are spaced apart and parallel with respect to one another forming a spatially symmetric magnetic circuit.

(2) Providing an insulating frame (FIG. 2) in the form of a prism with transverse slots 15 (FIG. 1) for the toroidal cores' carrying the sections, secured in the slots by insulating posts (FIG.

2)

Lisin, et al, discloses the claimed invention except for the annealing and impregnation processes and the amorphous strips.

Wakeling, et al, discloses magnetic core for electrical induction apparatus, e.g. a power transformer or a distribution transformer, comprising:

(1) Spaced apart yokes each formed of wound magnetic strip material, e.g. amorphous magnetic material, (Abstract) (Figure 1) and differing widths, and wound into closed loops or coils of any desired shape (Page 6, lines 1-35)

(2) Three legs interconnecting the yokes; the legs are formed of at least substantially planar layers of amorphous magnetic material and are interleaved at their ends with the wound yoke layers of magnetic strip material; the strip layers having different widths (Abstract) (Figure 1) (Page 6, lines 1-35)

(3) The formation of slots due to the layered strips (Page 6, lines 23-27)

One skilled in the art, at the time the invention was made, would have found it obvious to combine the teachings of Lisin, et al, with the teachings of Wakeling, et al, to create a three-phase transformer having top and bottom yolks connected together with three leg portions. The yolks and leg portions made from strips of amorphous ferromagnetic material having different widths. The motivation for utilizing the amorphous ferromagnetic strip, as taught by Wakeling, et al, would have been to reduce magnetic losses.

Lisin, et al, in view of Wakeling, et al, disclose the claimed invention except for the annealing and impregnation processes.

Poulsen discloses a three-phase transformer, comprising three frames shaped winding assemblies, the three winding assemblies being interlinked by hollow, cylindrical cores wound from ferromagnetic strip material and surrounding each of the three legs. For maximum performance the

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core sections are pre-wound on a mandrel to a desired size and stress relief annealed in order to restore or sometimes enhance the original properties of the core material. After the annealing process the core cylinders are transferred to the legs. Additionally, dependent on the application, the mechanical strength and dielectric properties of the assembly may be improved by means of impregnating with varnish or encapsulating the coil assembly in a suitable casting resin. (Abstract) (Column 3, lines 54-58) (Column 4, lines 1-12)

Poulsen does not disclose the specific range of temperatures of the annealing process being up to about 550 degrees Celsius. It would have been obvious to one having ordinary skill in the art, at the time the invention was made to incorporate a suitable range of temperatures for the annealing process, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Additionally, applicant has not disclosed that the claimed range solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with any desired temperature for the annealing process.

One skilled in the art, at the time the invention was made, would have found it obvious to combine the teachings of Lisin, et al, in view of Wakeling, et al, with the teachings of Poulsen and anneal the yolks and the vertical stacks for the purposes of optimizing magnetic properties, reducing flexibility, and enhancing original properties of the core. Further, by impregnating the components, the mechanical strength and dielectric properties of the assembly may be improved.

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8. Claim 22-24, 26, and 27 are rejected under 35 U.S.C. 103(a) as being obvious over U.S. Patent Number 4,338,657 to Lisin, et al, in view of European Patent Number 0 151 048 to Wakeling, et al, and further in view of U.S. Patent Number 5,168,255 to Poulsen.

Regarding claim 22, Lisin, et al, in view of Wakeling, et al, further in view of Poulsen disclose the claimed invention except for the welding of the ends of the amorphous strips. It would have been obvious to one having ordinary skill in the art at the time the invention was made utilize different methods of fixing coils/strips together to ensure a secure attachment since the examiner takes Official Notice of the equivalence of impregnation or encapsulation of resins, electrical connections, welding, soldering, bonding, and fusing for their use in the electrical art and the selection of any of these known equivalents to secure or fix connections would be within the level of ordinary skill in the art. Furthermore, applicant has not disclosed that the welding of the strips solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with any known method of "fixing."

Regarding claims 23, 24, 26, and 27, Lisin, et al, in view of Wakeling, et al, further in view of Poulsen disclose the claimed invention except for stating that the total width of the plate-like element and the stacks/columns are equal to the height. Lisin, et al, however does disclose the use of differing widths but does not specify the widths in relation to the height. It's conceivable that the transformer may have been constructed with equal widths and heights of the columns and yolks. However, it would have been an obvious matter of design choice to make the height equal to the width, since applicant has not disclosed that this particular structure solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with differing heights and widths. Applicant admits on page 11 of the disclosure that "...a toroid having desired dimensions can be obtained."

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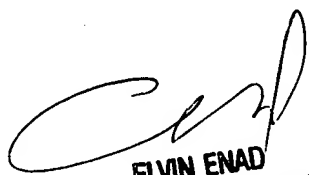
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Poker whose telephone number is 703-305-4037. The examiner can normally be reached on 6:00-3:30, Mon.-Fri. (alternating Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin G. Enad can be reached on 703-308-7619. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1782.

jap
May 14, 2003


ELVIN ENAD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2832
5/15/03